

**RELEASE NOTICE**  
**OF**  
**"MAYBELL SOURCE" ANTELOPE BITTERBRUSH, PURSHIA TRIDENTATA**  
**AS**

Unique low-growing ecotype  
for Wildlife and Rangeland Use

by the  
UPPER COLORADO ENVIRONMENTAL PLANT CENTER (UCEPC)  
and the  
USDA - **NATURAL RESOURCES CONSERVATION SERVICE**  
and the  
USDA - **FOREST SERVICE**, INTERMOUNTAIN RESEARCH STATION  
and the  
**USDI - BUREAU OF LAND MANAGEMENT**  
and the  
UTAH DIVISION OF WILDLIFE RESOURCES  
and the  
COLORADO STATE AGRICULTURAL EXPERIMENT STATION

This announces the release of The "Maybell Source" antelope bitterbrush as a **"SELECT CLASS"** for identification of commercial collections, seed orchards, and the marketing of **seeds** and plants.

Antelope bitterbrush (**Purshia tridentata** (Pursh) DC.) is one of the most important native browse shrubs in the western United States. It is also known by quininebrush, buckbrush, and antelopebrush. Antelope bitterbrush has a wide ecotypic variation and hybridizes with Desert bitterbrush (**Purshia glandulosa**), and Stansbury cliffrose (**Cowania mexicana** var. **stansburiana**).

Antelope bitterbrush contains resins and maintains a heavy canopy that burns readily and may contribute to range fires. Much (30,000 acres) of the original stand of 'Maybell' (estimated roughly at 40,000 acres) has been destroyed by a series of range fires. This emphasizes the need to maintain seed supplies of this low-growing, layering accession. It is also important to maintain commercial and agency documentation of seed collections, so long-term results of range seedlings can be followed. In a bitterbrush comparison project at the Plant Center, 'Maybell' seedlings had a survival of 47% with good vigor after 11 years. However, in this study 'Maybell' exhibited almost no ability to sprout after fire. (The data for Project 08A073J is presented in Appendix I.)

ORIGIN:

'Maybell' is found in Northwest portion of Moffat County, Colorado. The area is 40 miles west of Craig, Colorado in Major Land Resources Area 348. The collection site is located on both public and private land. Seed collection on private land will require permission, while public land will require a permit. It is found on deep Maybell sand soils at 6,000 to 7,000 feet elevation. The moderately coarse textured soils are associated with the Sandhills range site. It is found on nearly all aspects and is associated with basin big sagebrush, silver sagebrush, rubber rabbitbrush, pricklypear cactus, Louisiana sage, silver lupine, western wheatgrass, indian ricegrass, and needle-and-thread.

'Maybell' has been evaluated at the UCEPC using accession numbers 9024373 and EPC - 1395.

#### DESCRIPTION:

The "Maybell Source" is a creeping or decumbent ecotype having propensity for layering; that is, a decumbent branch may root from adventitious buds where it contact the ground. Low-growing, layering ecotypes are common on sandy loam soils in southeastern Idaho, and in silt and clay soils in central Utah.

The "Maybell Source" is 24 to 40 inches in height and generally 36 to 52 inches wide. Leaves are persistent with the small, young, winter leaves turning purplish red but remaining over winter. The leaves are small (6 to 19mm), wedge shaped, and three-lobed. Leaves vary in color from gray green to bright green. It flowers profusely with mostly yellow blossoms.

#### DEVELOPMENT:

Early trials by the U. S. Forest Service Shrub Sciences Laboratory utilized seed collected from the Maybell population by commercial collector. Materials tested by the UCEPC were collected primarily from a key mine north of Cedar Springs in Moffat County, Colorado. Seed collected August 5, 1982 was used to establish three projects on the UCEPC and one at the Colowyo coal Company mine north of Meeker, Colorado. Survival has generally ranged from 83 to over 95 per cent. (The data for Project 08S0772 is presented in Appendix II.)

The "Maybell Source" was direct seeded on two sites in the Colony Shale Oil Project in 1989. The mine site is located north of Parachute, Colorado. In 1993 The "Maybell Source" plants had good vigor and ranged from 0.7 to 1.4 plants per foot of row on the two sites. (The data for the Colony Shale Oil project is presented in Appendix III.)

In a planting near Pinedale, Wyoming, The "Maybell Source" performance ranged from slightly better to slightly worse than other accessions. The "Maybell Source" performance in a planting in Western Duchesne County, Utah was equal to or slightly poorer than Fountain Green. (The data for the Pinedale, Wyoming planting is presented in Appendix IV.) (The data for the Utah planting is presented in Appendix V.)

Nine shrub species were seeded at Colowyo Coal Company and The "Maybell Source" was one of the most successful shrubs. In a UCEPC project transplanted tubing plants expressed the layering trait in the second year. (The data for the Colowyo planting is presented in Appendix VI.)

The "Maybell Source" in UCEPC orchard, produced about 0.5 pounds of clean seed per plant. The Maybell, Colorado area has been the mine for commercial collection in past years. However, UCEPC orchards have been used for additional collection.

Two other selections of antelope bitterbrush are 'Lassen' and 'Fountain Green'. 'Lassen' is an upright tall growing ecotype originating from Lassen County, California. Released as a named variety in 1984, it is more adapted to the granitic moils of California and Idaho. It has not shown good performance in Colorado.

'Fountain Croon' a source identified germplasm, originated from San Pete County, Utah. It has a robust upright growth form but is not as tall as 'Lassen'. It was released in 1909 and is recommended for use in the Intermountain region on sedimentary soils.

#### USES:

The "Waybell Source" is recommended for rangeland and reclamation seedings. It is useful for spring and winter browse for domestic livestock, antelope, deer, elk, and small mammals. It is suitable for erosion control on light textured soils where wildlife presence is acceptable. The low-growth and attractive appearance makes it promising as a low maintenance landscaping species for xeriscape.

#### AREA OF ADAPTATION:

The "Waybell Source" is recommended on moderately coarse textured, well drained soils where annual precipitation is 10 to 24 inches and at 5,000 to 8,000 feet elevation. While the entire area of adaptation is not known, it should perform well in ecological zones similar to the collection site.

Antelope bitterbrush often shows good adaptation to sterile soils. A beneficial organism (*Frankia* spp.), a nitrogen fixing endophyte, is associated with antelope bitterbrush.

#### MAINTENANCE AND VARIETY:

Colorado Seed Growers Association will certify The "Waybell Source" "Selected Class Seed" as harvested from designated sources as follows: (1) seed collected from native stands with the area described below (Generation 0), or (2) seed collected from certified seed orchards located at the UCEPC (Generation 1). Plant materials (seed or plants) for establishing seed orchards to produce "Selected Seed" must be obtained from the UCEPC and maintained according to appropriate standards for the state where grown.

The "Waybell Source" for "Selected Seed" certification will be defined as low-growing antelope bitterbrush within four miles of the south side of Highway 40 from Waybell, Colorado, northwest to Mud Spring Creek. A major portion of the natural range of this ecotype is found in Township 6 North, Range 96 West, (see attached map).

#### SEED PRODUCTION:

The "Waybell" Source has been one of the better seed producing antelope bitterbrush accessions at the UCEPC. Estimated yields based on plot work is about 350 bulk pounds per acre. One individual plant produced 1.2 bulk pounds. It takes four to five years for new transplants to produce quantities of seed.

The "Maybell Source" antelope bitterbrush has approximately 13,900 seeds per pound. Average seed weight is 3.62 grams per 100 seeds.

**COMMERCIAL SOURCES:**

Contact the Upper Colorado Environmental Plant Center, Meeker, Colorado; Colorado Seed Growers Association, Fort Collins, Colorado; or Little Snake River, Bureau of Land Management Office in Craig, Colorado for information about seed collection and available planting stock.

Plant materials for commercial "Select Seed" class orchard8 can be purchased from the Upper Colorado Environmental Plant Center.

# Upper Colorado Environmental Plant Center

Owned & Operated by Douglas Creek and White River SCD's

5538 R.B. Cnty. Rd. 4

Meeker, Colorado 81641

Phone: (970) 878-5003

P.O. Box 448

Fax: (970) 878-5004

December 17, 1996

To Whom it May Concern:

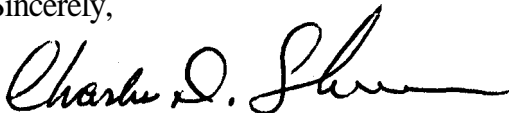
We are working on the release of 'Maybell Source' Antelope bitterbrush and are in need of the following signatures:

✓ Charles Sloan, UCEPC  
✓ Duane Johnson, NRCS; Lakewood CO  
✓ Denver P. Burns, Provo Shrub Lab  
✓ Richard Stevens, DOW - Utah  
✓ Dr. Lee Sammers, Experimental Station  
✓ John Husband, Little Snake Resource Area  
Gary Nordstrum, NRCS; Washington D.C.

We are requesting your signature and would like to complete this process as soon as possible. After you have signed the signature page, please forward to the following address, which is enclosed.

We appreciate your time and corporation with this matter.

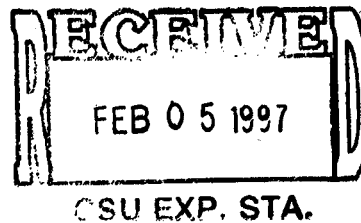
Sincerely,



UCEPC Administrative Board

Enclosure

jr



**PLEASE FORWARD TO THE NEXT ADDRESS LISTED AFTER YOU  
HAVE SIGNED THE SIGNATURE PAGE.  
THANKS!**

✓ **Denver P. Burns**  
**Attn: Durant McArthur**  
**735 N. 500 E.**  
**Provo UT 84606**

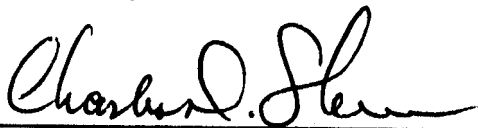
✓ **Richard Stevens**  
**Box 32-7**  
**Ephriam UT 84627**

✓ **Dr. Lee Sommers**  
**Colorado State University**  
**Plant Science Bldg.**  
**Fort Collins CO 80523**

✓ **John Husband**  
**BLM, Little Snake Res. Area**  
**1280 Industrial Ave.**  
**Craig CO 81625**

✓ **Gary Nordstrum**  
**Director of Ecological Science Div.**  
**P O Box 2890 Room 6154 S. Bldg.**  
**Washington DC 20013-2890**

**Approved By:**



**Charles D. Sloan**  
President Administrative Board  
Upper Colorado Environmental Plant Center

12-24-96  
Date



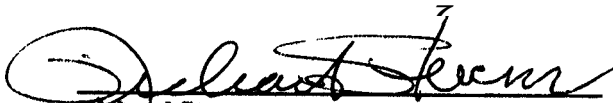
**Duane Johnson**  
USDA, NRCS  
Lakewood Colorado State Office

1-6-97  
Date



**Denver P. Burns**  
Acting Station Director  
Provo Shrub Lab, Provo Utah

1/22/97  
Date



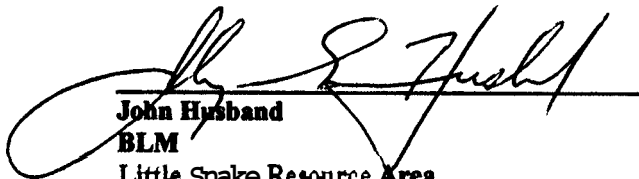
**Richard Stevens**  
Utah Division of Wildlife  
Ephraim Utah

1-31-97  
Date



**Dr. Lee Sommers**  
Director of Colorado State Ag,  
Experimental Station

2-6-97  
Date



**John Husband**  
BLM  
Little Snake Resource Area

2/24/97  
Date



**Gary Nordstrom**  
Director of Ecological Sciences Division, NRCS  
Washington

3/6/97  
Date